



Attorney's Docket No. 040080-164

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THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)

Petter Karlsson et al.)

Application No.: 09/986,544)

Filed: November 9, 2001)

For: ARRANGEMENT FOR CUTTING)
AN OPTICAL FIBRE)

Group Art Unit: 3724

Examiner: JASON D PRONE

Appeal No.: Unassigned

Confirmation No.: 5848

APPEAL BRIEF

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated October 29, 2004 (Paper No. 7), rejecting claims 1-4 a fourth time, which are reproduced as the Claims Appendix of this brief.

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Government fee is filed herewith.

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

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I. Real Party in Interest

The real party in interest with respect to this application is Telefonaktiebolaget LM Ericsson (PUBL), the assignee of record in this application by virtue of the Assignment recorded on January 28, 2002.

II. Related Appeals and Interferences

The Appellants' legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-4 stand non-finally rejected four consecutive times, and are the subject of this appeal.

IV. Status of Amendments

While four Office Actions have issued in connection with appealed claims 1-4, no claim has been finally rejected. The only amendments filed with respect to the claims were made in Appellants' response dated July 7, 2003, to address minor informalities noted by the Examiner.

V. Summary Claimed Subject Matter

The present invention, as generally described starting at line 7 of page 2 to page 3, line 27 of Appellants' specification and shown in Figure 1, is directed to an arrangement for cutting an optical fiber that includes an optical fiber cutter (e.g., see items 2, 3 in Figure 1 and page 2, lines 10-13). The arrangement includes a motor (e.g., see item 5 in Figure 1 and page 2, lines 19-20) provided to operate the fiber cutter. The motor is controlled by a control unit (e.g., see item 10 in Figure 1 and page 2, lines 27-30) to start a cutting movement in response to a start signal to be

generated when the fiber is located in the fiber cutter. The claimed arrangement includes a detector (e.g., see item 12 of Figure 1 and page 3, lines 5-7) connected to the control unit (e.g., see page 3, line 16). The detector is adapted to detect snap off of the fiber (e.g., see page 3, lines 9-10) and in response thereto causes the control unit to generate a stop signal to stop the cutting movement (e.g., see page 3, lines 16-18). If the detector does not detect fiber snap off, the cutting movement is automatically stopped at a predetermined position of the fiber cutter (e.g., see page 3, lines 20-23).

VI. Grounds of Rejection to be Reviewed on Appeal

- A. Claims 1-4 stand rejected under 35 U.S.C. §112, first paragraph, based on the allegation that the specification is non-enabling for the claimed subject matter.
- B. Claims 1-4 stand rejected under 35 U.S.C. §112, second paragraph, based on the allegation that the claims are indefinite for failing to particularly point out and distinctly claim subject matter which Appellant regards as the invention.
- C. Claims 1,3 and 4 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hakoun et al. (U.S. Patent No. 5,382,276) in view of Frederick, Jr. (U.S. Patent No. 3,880,028) and Taitler (U.S. Patent No. 6,418,823 B1).
- D. Claim 2 stands rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hakoun et al. in view of Frederick, Jr. and Taitler and in further view of Bando (U.S. Patent No. 5,832,801).

VII. Argument

A. The Specification Fully Enables the Subject Matter of Claims 1-4

The rejection of claims 1-4 under 35 U.S.C. §112, first paragraph, is based on the Examiner's allegation, in section 7 at pages 5 to 6 of the Office Action, that the specification does not reasonably provide enablement because:

It is "unclear what structure allows the handle and the fixture to act together as a cutter to perform the cutting motion. Since the handle is represented as a line (3) and the fixture is represented as a rectangle (2), it is not clear what

structure allows the fiber to be snapped [off] or what structures dictates the snapping.

However, while it has long been held that a patent must contain description that enables one skilled in the art to make or use the claimed invention, it is not necessary of an inventor to explain every detail since he is speaking to those skilled in the art. See, *DeGeorge v. Bernier*, 768 F.2d 1318, 226 U.S.P.Q. 758 (Fed. Cir. 1985). It is submitted that one of ordinary skill in the art would have understood the way parts of an optical fiber cutter operate to perform a cutting function. For instance, the present application describes an exemplary hand-operated type fiber cutter that is known to those of ordinary skill in the art. See, page 1, lines 8-10 and page 2, lines 10-14. As described therein, an exemplary fiber cutter of the known hand-operated type includes a fixture 2 and a handle 3 pivoted to the fixture 2 for pressing the fiber towards mechanical tensioning. The fixture includes bending and necking means (not shown) to cut the fiber. Appellants' invention does not lie in the novelty of optical fiber cutter *per se*. Rather it is in the combination of elements arranged with the fiber cutter for automating cutting of optical fibers. Thus, it would not be necessary to describe each and every element of a fiber cutter to one of ordinary skill in the art because the concept of automating a cutting movement in a cutter would not require undue experimentation.

The Examiner also makes statements concerning the clarity of the description of an exemplary "hand operated cutter" described on page 2 of the application. More particularly, the Examiner states that the description of automating the cutting operation of a known hand-operated fiber cutter is contradictory because the specification describes the handle of such a cutter as being operated by a motor. However, it is respectfully submitted that these statements take the cited parts of the specification out of the context of what is actually described. It is respectfully submitted that one of ordinary skill in the art, after having read the specification, would have understood that the exemplary example involving "a known hand-operated cutter" concerns automating such a known cutter.

Finally, the Examiner asserts that is unclear how the detector described on page 2, lines 12-23, detects "no snap off sound" and how the sensor receives this

information and stops the motor. However, the exemplary acoustic detector described on page 2 does detect when no snap off sound happens. That is, no snap off sound would be detected whenever the detector is operating, and an output signal pertaining to detection of snap off is not generated.

It is respectfully submitted that the Examiner's perception of lack of "clarity" as alleged in the Office Action is not pertinent to a finding of undue or unreasonable experimentation, which is the test of enablement.

The Legal Standards

The enablement requirement refers to the requirement of 35 U.S.C. §112, first paragraph, that the specification describe how to make and how to use the invention being claimed. The Supreme Court decision *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) set forth the test for enablement as: "Is the experimentation needed to practice the invention undue or unreasonable?" *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1988) confirms this is still the standard. See also MPEP 2164.01. In this instance, it is not clear that any experimentation would be required as more fully explained below. As identified in MPEP 2164.01(a) the undue experimentation factors include, but are not limited to:

- (a) the breadth of the claims;
- (b) the nature of the invention;
- (c) the state of the prior art;
- (d) the level of one of ordinary skill;
- (e) the level of predictability in the art;
- (f) the amount of direction provided by the inventor;
- (g) the existence of working examples; and
- (h) the quality of experimentation used to make and use the

invention based on the content of the disclosure.

None of these factors have been addressed by the Examiner in connection with undue experimentation. Insofar as the initial burden rests on the Examiner to provide reasons for lack of enablement, and the Examiner has provided no explanation regarding any of these factors, it is respectfully submitted that this

rejection must fail, as the record does not establish a *prima facie* case of unpatentability. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

Additionally, a working example is provided. Further, the fiber cutting arts and electromechanical control arts have a high level of predictability. As noted above, Appellants do not claim that they have found novel fiber cutters. Rather, it is the unique combination of elements including a fiber cutter which leads to the patentable arrangement recited in the claims.

As noted in MPEP 2164.01(a), a conclusion of lack of enablement means that, based on the evidence regarding each of the above factors of the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. It is not evident that any experimentation need be done to carry out the present invention, let alone undue experimentation.

As such, the rejection is improper and should be reversed.

B. Claims 1-4 Recite Definite Subject Matter

In section 9 spanning pages 9 to 10 of the Office Action, the Examiner asserts that it is allegedly "unclear what structure the fiber cutter incorporates and it performs a cutting movement." The Examiner also asserts that it is unclear what action being performed is designated the cutting motion. Appellants submit, however, that the allegations by the Examiner concerning clarity appear directed to the breadth of the claim recitations rather than whether claimed recitations regarding the cutting movement of the claimed fiber cutter are indefinite. Moreover, as instructed in §2173.02 of the MPEP, definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) The content of the particular application disclosure;
- (B) The teachings of the prior art; and
- (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

One of ordinary skill in the art, especially after reading Appellants' specification, would have understood what is meant by a motor provided to operate a fiber cutter. One of ordinary skill in the art also would have understood that some motion is involved when a fiber cutter cuts an optical fiber. Hence, one of ordinary skill in the art would have understood the claim term "cutting movement," as it relates to a fiber cutter cutting an optical fiber.

The Examiner's next allegations that "it is unclear how the 'no fiber snap off' is detected when the detector can only detect the 'snap off sound,'" and "it is unclear what structure stops the cutting movement when the undetectable sound is detected," are based on either an unreasonable interpretation of the claims or a fundamental misunderstanding of the function of a detector. For instance, the function of a detector is to detect something. When a detector is operating, an occurrence of the thing that a detector is designed to detect, and the detection of the thing, means that the detector detected the thing. Conversely, the absence of a detected occurrence of the thing for that same detector means that the detector is not detecting the thing. In this case, the "thing" is snap off of an optical fiber. When the detector does not detect snap off, the logical conclusion must be that the detector is not detecting optical fiber snap off.

Appellants submit that the meaning of "no fiber snap off is detected," as claimed, would be immediately apparent to one of ordinary skill in the art. This meaning is clear when considering the actual language of claim 1, "the cutting movement being automatically stopped at a predetermined position of the fiber cutter if no fiber snap off is detected" (emphasis added). In other words, if the cutting movement of the fiber cutter reaches a predetermined position and the detector does not detect an occurrence of fiber snap off, the cutting movement of the cutter is automatically stopped. As pointed out above, it is axiomatic that claims are not to be read in a vacuum, but rather in light of Appellants' disclosure and interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

For at least these reasons, the rejection under Section 112, second paragraph should be reversed.

C. The Proposed Combination of the Hakoun et al., Frederick, Jr. and Taitler Patents Fails to Establish *Prima Facie* Obviousness with Respect to Claims 1, 3 and 4

In accordance with the MPEP, three criteria must be met to establish a *prima facie* case of obviousness. First, the cited documents must describe or suggest all of the claim features. Second, there must be some suggestion or motivation, either in the cited documents themselves or in the knowledge generally available to one of ordinary skill in the art, to have combined the teachings of the cited documents. Third, there must have been a reasonable expectation that the documents could have been successfully combined to yield the claimed invention.

The rejections raised in the Action cannot stand at least because no combination of the cited documents describes or suggests the combination of all claim features, and furthermore, motivations to combine the cited documents are absent. Reasonable expectations of successful combinations would also be absent, but it should be sufficient to point out the lack of motivation for the proposed combination and the absent features.

All Claim Limitations Are Not Taught or Suggested

For example, claim 1 recites, among other things, "a detector connected to the control unit is adapted to detect snap off of the fiber and in response thereto causes the control unit to generate a stop signal to stop the cutting movement, the cutting movement being automatically stopped at a predetermined position of the fiber cutter if no fiber snap off is detected." Accordingly, the recited control unit is adapted to stop the cutting movement of the fiber cutter under two conditions: 1) when the detector has detected a "snap off" of the fiber; or 2) when the cutting movement reaches a predetermined position of the fiber cutter if no fiber "snap off" is detected. None of the cited documents, either alone or combination, discloses or suggests such a control unit.

The Office acknowledges on page 7 of the Action, in paragraph 11, that neither Hakoun et al. nor Frederick, Jr. disclose or suggest stopping the cutting movement when a "snap off" of the fiber is detected. Nevertheless, the Examiner

asserts that Taitler discloses the absent feature. In particular, the Examiner asserts that Taitler describes the absent feature at column 7, lines 49-57, which states:

With respect to FIG. 24, the cutting head starts moving from rest and is accelerated until [sic] it reaches a penetrate velocity at the slice surface area. The cutting head is then accelerated to a final velocity (while cutting), for a high valued performance. The end of cut is established by a suitable sensor, causing a stop of the cutting head and a start of an opposite movement (leaves the cut product).

Based on the above-cited passage, Taitler's sensor 8 and computing means 9 at best address only one part of the second condition for which the recited control unit is adapted to stop the cutting movement of the fiber cutter, and in the Appellants' view, does not disclose or suggest the entirety of the claimed condition. For example, even if one were to assume that Taitler discloses or suggests stopping the cutting movement when the movement reaches a predetermined position, the document still does not describe that the cutting movement is automatically stopped at the predetermined position if no "snap off" of the item being cut is detected, as claim 1 recites. In addition, the Taitler patent mentions nothing about detecting the first condition for which the recited control unit is adapted, namely, detecting a "snap off" of the product for which Taitler's arrangement is designed to cut.

The only apparent guidance the Taitler patent provides regarding the functionality of the sensor 8 may be found at column 4, lines 50-55, of the document, which states:

the apparatus is equipped with sensors 8 or other measurement means at different places (most of them not drawn, however the skilled in the art person should know how properly to choose them and to incorporate in the apparatus of the present invention), for alarm, limit switch and performance sensing and measuring.

The Appellants respectively assert that this passage does not describe or suggest a control unit that is adapted to stop the cutting movement of the fiber cutter based on the occurrence of the two conditions recited in claim 1. Accordingly, claim 1 is considered allowable over the cited combination at least because the cited combination does not disclose or suggest all of the features recited in Appellants' claim 1.

No Motivation for the Proposed Combination

In addition to the above, the Appellants respectfully assert that one of ordinary skill in the art would not be motivated to combine the cited documents as the Action asserts, and even if one had, one would have been more likely to arrive at something that did not work at all or not in the manner claimed by the present application.

In an attempt to support a *prima facie* case, the Examiner asserts that Frederick teaches a detector that is a microphone to detect details of the cutting and to adjust the velocity of the work piece cutting movement. The Examiner goes on to assert that it would have been obvious for the skilled artisan to combine the teachings of Frederick with those of Hakoun to provide for better automated cutting. Recognizing that the combination still does not reach the claimed invention, the Examiner asserts that Taitler describes detecting a completion of the cut to effect a stopping of the cutting movement, and that it would have again been obvious to combine the teachings of Taitler with the arrangements of Hakoun et al. and Frederick, Jr. to provide for better automated cutting. Appellants disagree with this position for two reasons.

First, nothing in Frederick, Jr. suggests the need to modify its detector with the teachings of Taitler to provide for stopping the scoring movement based on the output of the detector. Indeed, Frederick, Jr. discourages such an arrangement by describing that its detector is designed to be active only when the scoring of a piece material, such as glass, is taking place. See, column 4, lines 23-27. Instead of using the detector to stop the scoring movement, the cutter head mechanism 15 of Frederick, Jr. is raised and lowered by an operator based on a location of the cutter head mechanism 15 in relation to the material 12 being scored. See, column 4, lines 14-24. Based on the above, it is not clear how incorporating features from Taitler's arrangement would provide for better automated cutting, as the Examiner contends.

Consequently, the motivation cited by the Office for combining Frederick and Taitler appears to come from the description of the Appellants' invention itself. Such hindsight reconstruction is improper. See, e.g., *Sensonics, Inc. v. Aerosonic Corp.*, 38 U.S.P.Q.2d 1551 (Fed. Cir. 1996); *In re Oetiker*, 24 U.S.P.Q.2d 1443, 1446 (Fed.

Cir. 1992) (reversing an obviousness rejection and stating the "reason, suggestion, or motivation" to combine (or modify) prior art "can not come from the applicant's invention itself. [Citation omitted.]"). Accordingly, the rejection of claim 1 is improper for this reason as well.

Moreover, a person of ordinary skill in the art would have known that the features of Frederick and Taitler cannot be combined without further modification to arrive at the subject matter defined by claim 1. First, Frederick's arrangement would have to be modified to automatically stop the scoring of the material when the cutter head mechanism 15 reached a predetermined position if Frederick's detector did not detect any scoring. It is not clear how one would modify Frederick, Jr. to achieve this operation, as Frederick, Jr. only describes that the pressure of the scoring or the speed at which the scorer is moved across the object being scored is adjusted based on the detector output signal. See, column 3, lines 26-30. Second, Frederick's arrangement also would require additional modification to stop the cutting movement when a "snap off", i.e., a sound, is detected. But as discussed above, the arrangement of Frederick, Jr. relies on the detector generating a control signal that is proportional to a detected sound to adjust the pressure and/or speed of the scorer, not to stop the scorer.

The Examiner fails to provide any evidence that the device of Hakoun et al. for cutting a *ribbon of optical fibers* can be modified to include the means, disclosed by Frederick, Jr., for detecting sound waves emitted by the *scoring of glass plates*. Nowhere in Frederick, Jr. is there any disclosure of stopping the cutting movement based on the microphone detector as alleged by the Examiner. To the contrary, Frederick, Jr. discloses that the signal output from the detector is used to adjust the pressure on the scoring tool during the scoring operation to ensure a uniform cut (see column 1, lines 60-67 of Frederick). Accordingly, one skilled in the art would not have been motivated to modify the ribbon cutting device of Hakoun in view of the disclosure of Frederick, Jr.

As pointed out above, the cited documents fail to provide any suggestion for the modification of the Hakoun et al. patent proposed by the Examiner. Furthermore, even if one were to consider *arguendo* that one of ordinary skill in the art would have

been motivated to somehow combine the disparate documents cited, such combination would not have taught the combination of each and every claimed feature set forth in independent claim 1 and hence also in dependent claims 3 and 4. Because the Examiner has failed to meet these required criteria for establishing a *prima facie* case of obviousness, reversal of the rejection is warranted.

D. The Bando Patent Fails to Remedy the Deficiencies of the Hakoun et al., Frederick, Jr. and Taitler Patents

In section 12, the Examiner alleges that claim 2 is obvious over the combination of Hakoun et al., Frederick, Jr. and Taitler patents as applied to claim 1 and in further view of the Bando patent. The rejection of dependent claims 2 should be reversed, if for no other reason than it depends from independent claim 1, and the Bando patent does not teach or suggest the claimed features not taught or suggested in the Hakoun et al. and Frederick, Jr. and Taitler patents pointed out above. For instance, the Bando patent does not describe "a detector connected to the control unit is adapted to detect snap off of the fiber and in response thereto causes the control unit to generate a stop signal to stop the cutting movement, the cutting movement being automatically stopped at a predetermined position of the fiber cutter if no fiber snap off is detected," as recited in independent claim 1. Rather, the cited part of the Bando patent describes a numerical controller cutter apparatus for cutting a glass plate, which includes first and second linear motors operated synchronously with respect to one another to respectively move a cutter head in one direction and a bridge frame in another direction (see, the abstract). Since none of the Hakoun, Frederick, Taitler and Bando patents discloses or suggests a control unit and detector operation as claimed, the combination of these patents cannot possibly disclose or suggest these elements. Therefore, even if one skilled in the art would have been motivated to combine Hakoun, Frederick, Taitler and Bando, as suggested by the Examiner, such hypothetical combination would still fail to establish a *prima facie* case of obviousness, and thus would not render claim 2 unpatentable. Accordingly, Appellants respectfully request that the rejection of claim 2 under 35 U.S.C. 103(a) be reversed.

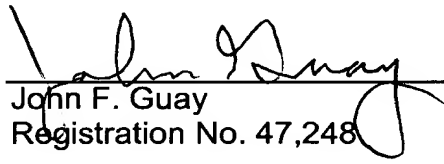
VIII. Conclusion

For all the foregoing reasons, Appellants respectfully submit that the rejections of claims 1-4 under Sections 112 and 103 are unsubstantiated, and thus unsustainable. Accordingly, the rejections are in error and should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

The Appealed Claims

Claim 1: An arrangement for cutting an optical fiber, comprising a fiber cutter, wherein:

a motor is provided to operate the fiber cutter, the motor being controlled by a control unit to start a cutting movement in response to a start signal to be generated when the fiber is located in the fiber cutter; and

a detector connected to the control unit is adapted to detect snap off of the fiber and in response thereto causes the control unit to generate a stop signal to stop the cutting movement, the cutting movement being automatically stopped at a predetermined position of the fiber cutter if no fiber snap off is detected.

Claim 2: The arrangement according to claim 1, wherein the motor is a linear motor.

Claim 3: The arrangement according to claim 1, wherein the detector is an acoustic detector adapted to detect a snap sound when the fiber snaps off.

Claim 4: The arrangement according to claim 3, wherein the detector is a microphone.

IX. EVIDENCE APPENDIX

(None)

X. RELATED PROCEEDINGS APPENDIX

(None)